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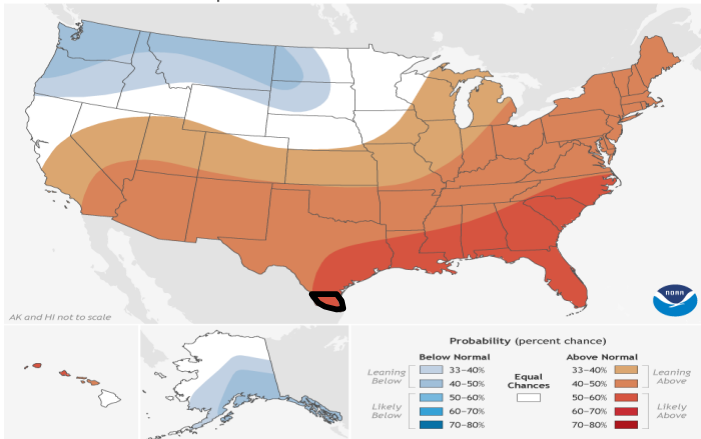
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# 2021/22 NOAA Late Autumn/Winter Outlook Perspective for the Lower Rio Grande Valley/Deep S. Texas Region

October 21, 2021

Barry Goldsmith, NWS Brownsville/Rio Grande Valley, Texas

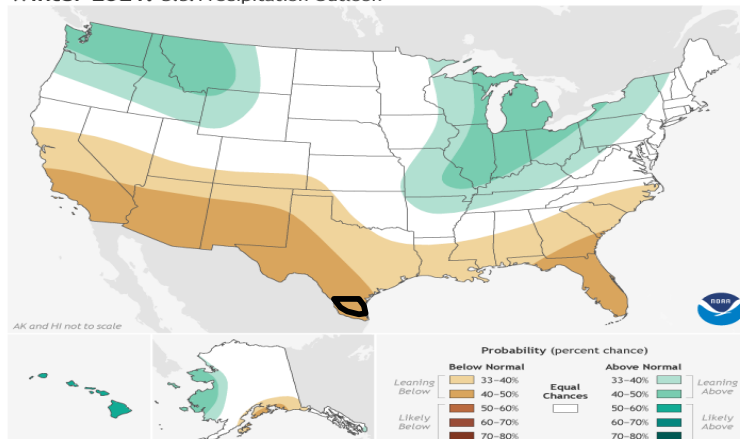
Winter 2021: U.S. Temperature Outlook



Temperature Outlook  
for December 2021 - February 2022  
Issued 21 October 2021

NWS Climate Prediction Center  
Map by NOAA Climate.gov

Winter 2021: U.S. Precipitation Outlook



Precipitation Outlook  
for December 2021 - February 2022  
Issued 21 October 2021

NWS Climate Prediction Center  
Map by NOAA Climate.gov

# Key Takeaways

- Above to much above average temperatures and below/much below average precipitation is forecast...like the forecast for last winter
- Should this forecast become reality:
  - **Drought** will redevelop and **worsen by the end of February**. A likelihood of extreme to exceptional (level 3/4) drought across parts of the Rio Grande Plains, Brush Country, and “upper” Valley
  - **Municipal and Agricultural water shortages** could become an issue by spring as Falcon Reservoir may drop to its **lowest values in more than 30 years**.
  - **Several freezes are possible** despite the warm/dry forecast, based on occasional atmospheric pattern shifts that would allow polar air to plunge into Texas. ***It is impossible to predict if a repeat of Feb. 2021 will occur.***
  - **Wildfire spread threat will gradually increase through the season**, based on the availability, of fuels including grass, brush, and trees.



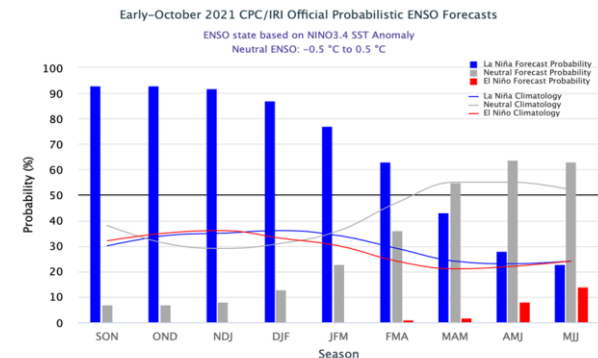
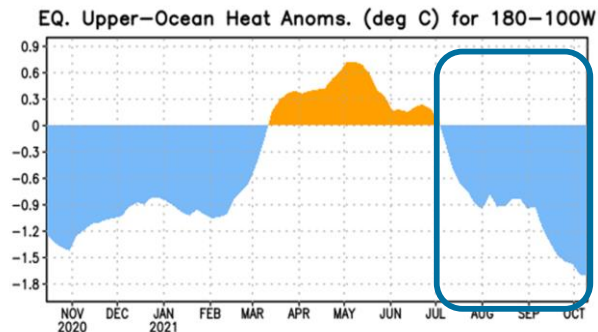
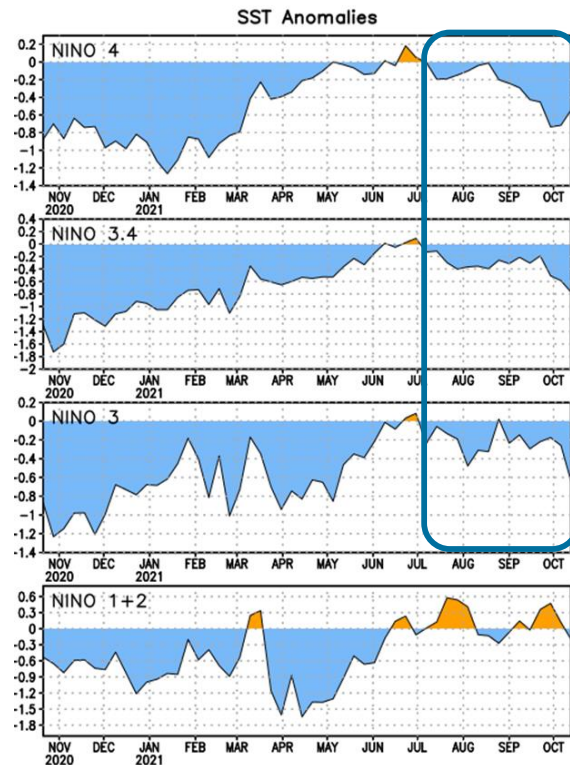
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# The “Why” of the Forecast

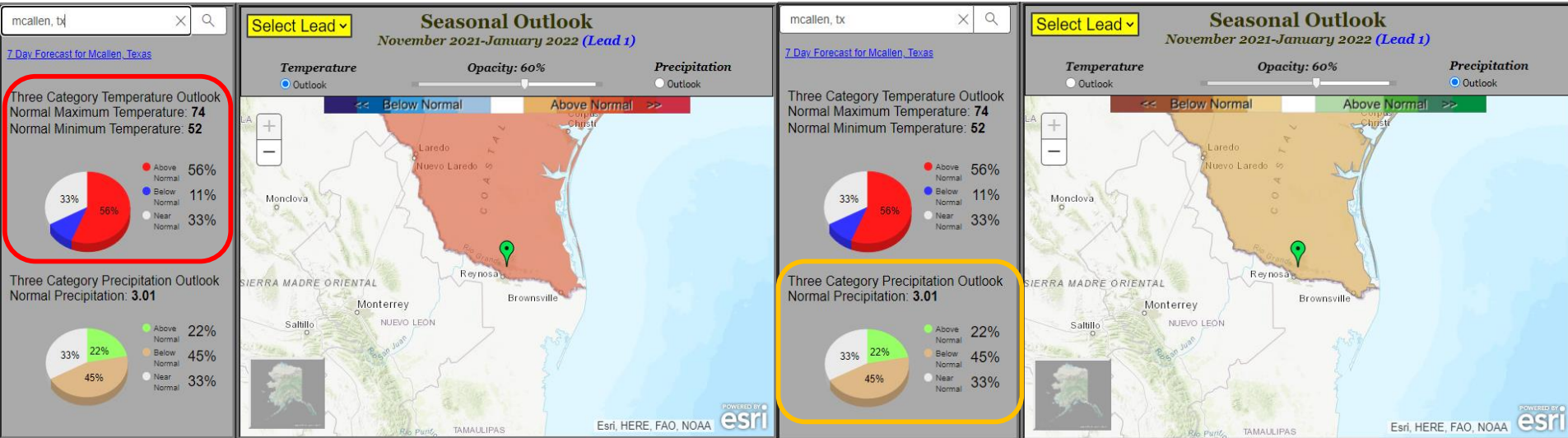
- La Niña is back (blue colored areas and bar chart, right), and should remain through February
- Persistent warmth over several years in the southwest U.S./northern Mexico is expected to continue into 2022



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# The November-January Outlook: Rio Grande Valley (McAllen as Anchor Point)



- **Temperature:** A 56% chance of above average. Seasonal average – Afternoons: falling from the lower 80s in early November to the low-mid 70s in late January. Mornings: Falling from 59-63 in early November to 47-52 in late January.
- **Precipitation:** A 43% chance of below average. Seasonal average: 2.5 to 4.5 inches of rainfall
- **For each:** Probability of the opposite (cooler and wetter) is between 11 and 22 percent.

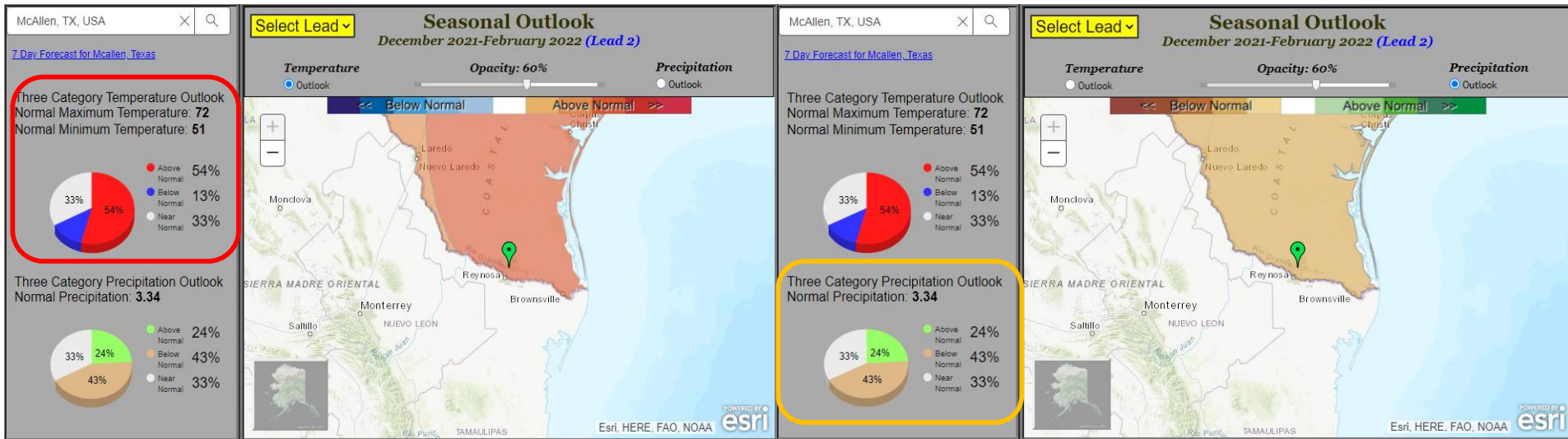


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# The Winter Outlook: Rio Grande Valley (McAllen as Anchor Point)



- **Temperature:** A 54% chance of above average. Seasonal average – Afternoons, 72 to 77. Mornings: 48 to 55.
- **Precipitation:** A 43% chance of below average. Seasonal average: 2.5 to 4 inches of rainfall
- **For each:** Probability of the opposite (cooler and wetter) is below 25 percent.



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# 2021 Temperatures: Ranked Values

Maximum 293-Day Mean Avg Temperature  
for Brownsville Area, TX (ThreadEx)

Maximum 293-Day Mean Avg Temperature  
for McAllen Area, TX (ThreadEx)

Maximum 293-Day Mean Avg Temperature  
for HARLINGEN, TX

Click column heading to sort ascending, click again to sort descending. Click column heading to sort ascending, click again to sort descending. Click column heading to sort ascending, click again to sort descending.

20	77.4	1998-01-01 through 1998-10-20	0	30	78.0	2015-01-01 through 2015-10-20	0	30	77.3	1929-01-02 through 1929-10-21	3
21	77.4	1999-01-01 through 1999-10-20	0	31	77.9	1945-01-01 through 1945-10-20	5	31	77.2	1933-01-02 through 1933-10-21	2
22	77.4	1990-01-01 through 1990-10-20	0	32	77.8	1953-01-01 through 1953-10-20	1	32	77.2	1916-01-03 through 1916-10-21	28
23	77.3	1982-01-01 through 1982-10-20	0	33	77.6	1996-01-02 through 1996-10-20	1	33	77.2	1916-01-02 through 1916-10-20	27
24	77.2	2021-01-01 through 2021-10-20	0	34	77.6	1996-01-01 through 1996-10-19	2	34	77.1	2021-01-02 through 2021-10-21	5
25	77.1	1980-01-02 through 1980-10-20	0	35	77.6	1994-01-01 through 1994-10-20	0	35	77.1	1939-01-02 through 1939-10-21	8
26	77.1	2002-01-01 through 2002-10-20	0	36	77.6	1957-01-01 through 1957-10-20	1	36	77.0	1955-01-02 through 1955-10-21	3
27	77.1	2013-01-01 through 2013-10-20	0	37	77.5	2021-01-01 through 2021-10-20	0	37	76.9	1938-01-02 through 1938-10-21	0
28	77.1	1980-01-01 through 1980-10-19	0	38	77.5	2007-01-01 through 2007-10-20	4	38	76.8	1962-01-02 through 1962-10-21	11
29	77.0	2004-01-02 through 2004-10-20	0	39	77.4	1993-01-01 through 1993-10-20	1	39	76.8	1944-01-03 through 1944-10-21	8
30	76.9	1945-01-01 through 1945-10-20	0	40	77.4	2001-01-01 through 2001-10-20	2	40	76.8	1944-01-02 through 1944-10-20	8

\*Note: Leap years appear in 1916, 1944, and 1996, hence the duplication

- Rio Grande Valley “anchor” cities: So far in 2021, a break from the several years of top ten warmest rankings...
- ...yet, still rank in the top half of all time warmest temperatures. Brownsville (top 20 percent), McAllen (top 50 percent), and Harlingen (top 33 percent)
- Combination of the [mid-February 2021 freeze](#) and wetter-than-average conditions from May-July played a critical role in keeping annual temperatures down compared with recent years.

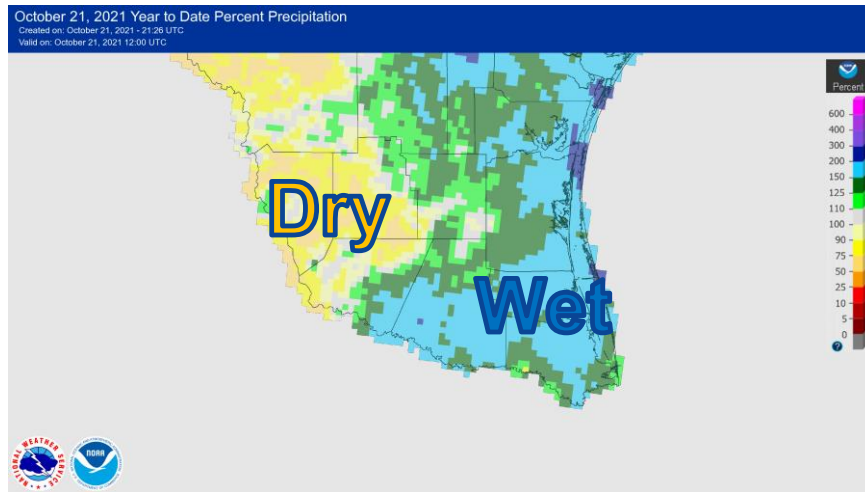
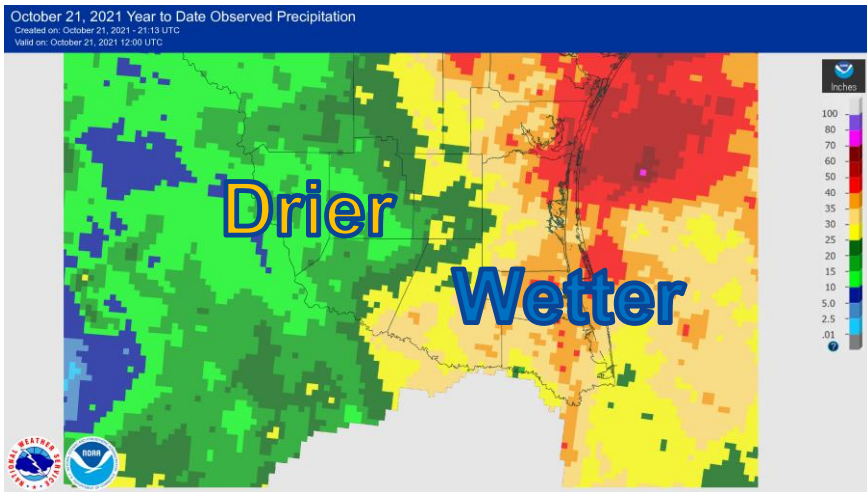


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# 2021 Rainfall So Far: Wet East, Dry West



Observed – January 1 - October 21, 2021

Percent of Average – January 1 - October 21, 2021

Rio Grande Valley “anchor” locations have been wetter than average for 2021 (and near record since May 1):

- **Brownsville (1878):** 34.44 inches (10<sup>th</sup>; record, 58.35 in 1886). Since May 1: 30.48 (5<sup>th</sup>; record: 52.89, 1886)
- **McAllen (1941):** 28.58 inches (9<sup>th</sup>; record, 35.97 in 1966). Since May 1: 26.70 (4<sup>th</sup>; record, 27.53 in 1966)
- **Harlingen (1912):** 34.72 inches (10<sup>th</sup>; record: 40.22 in 1933). Since May 1: 32.63 (4<sup>th</sup>; record: 37.88 in 1933)



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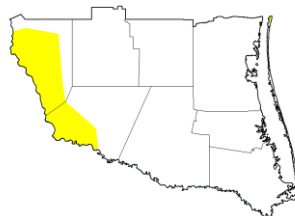
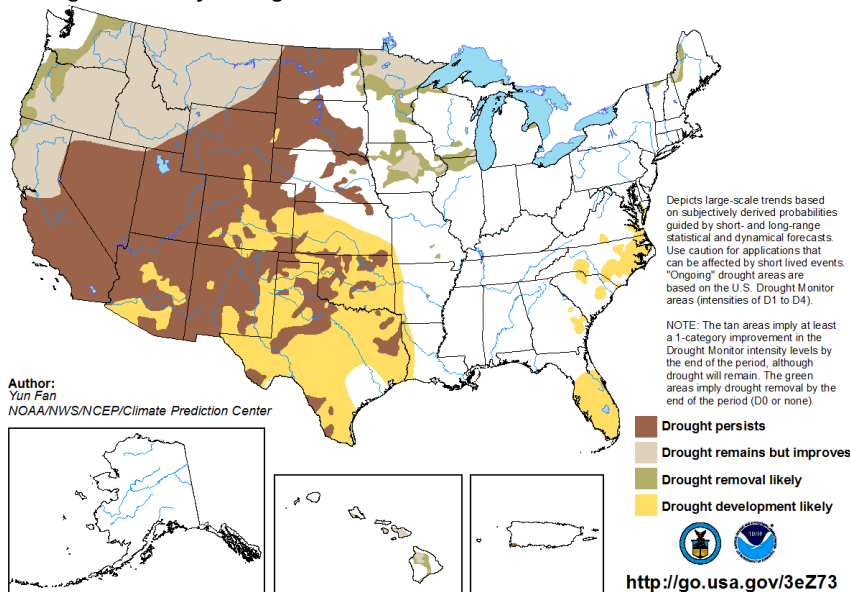
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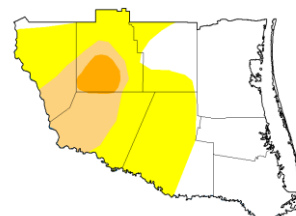
# The November-January “Droughtlook”

## U.S. Seasonal Drought Outlook Drought Tendency During the Valid Period

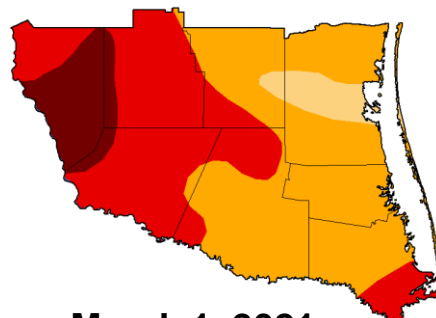
Valid for October 21, 2021 - January 31, 2022  
Released October 21, 2021



October 20, 2020



October 19, 2021



March 1, 2021

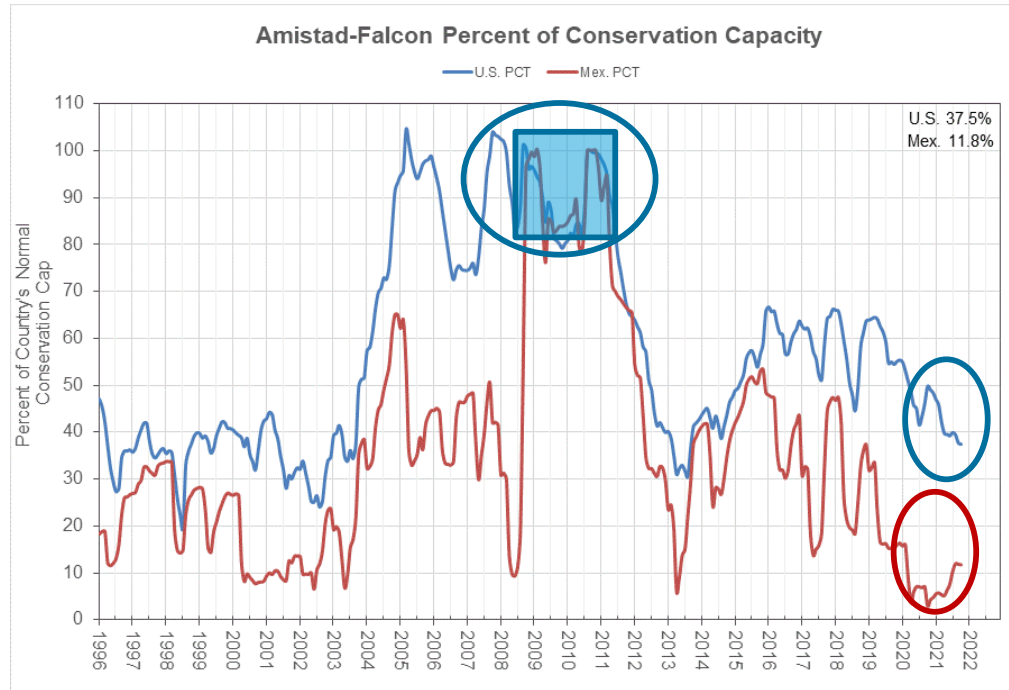
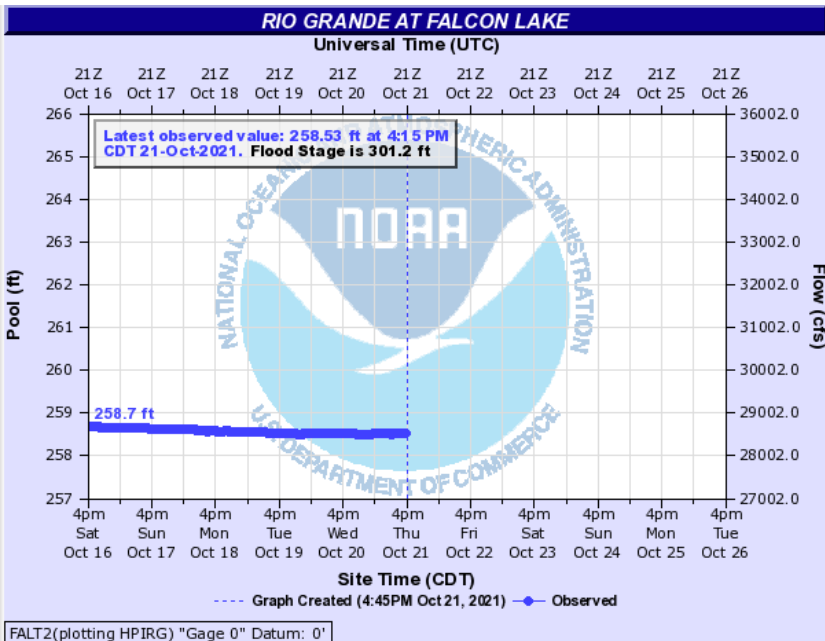
- Conditions likely to deteriorate similar to 2020/2021 (right)



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# Falcon Reservoir Near 30-Year Lows in October 2021



- October 2021 total capacity, Falcon Reservoir: **15 percent**
- October 2010 total capacity, Falcon Reservoir: near **100 percent**



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# Freeze(s) a Wild Card?



**Records...Shattered! (Feb. 15, 2021)** Weather Forecast Office Brownsville/Rio Grande Valley, TX

Preliminary Minimum Temperatures

Location (records since)	Preliminary New Record	Prior Record (year)	Difference
Brownsville (1878)	22*	25 (1895)	-3
McAllen (1941)	22	35 (1946)	-13
La Joya/Mission (1911)	21	33 (1951)	-12
Raymondville (1913)	21	32 (1963)	-11
Rio Grande City (1897)	20	25 (1963)	-5
Falfurrias (1908)	16	26 (1963)	-10
Edinburg (2000)	22	38 (2004)	-16
Port Mansfield (1958)	21	36 (1963)	-15
McCook (1942)	20	31 (1963)	-11
San Manuel (2000)	20	37 (2010)	-17
Santa Rosa (1987)	23	36 (1997)	-13

**Note:** These are preliminary values and subject to change with quality control.  
 \* Based on cooperative site measurement in place of automated sensor.

weather.gov/rgv

February 2011

January 2014

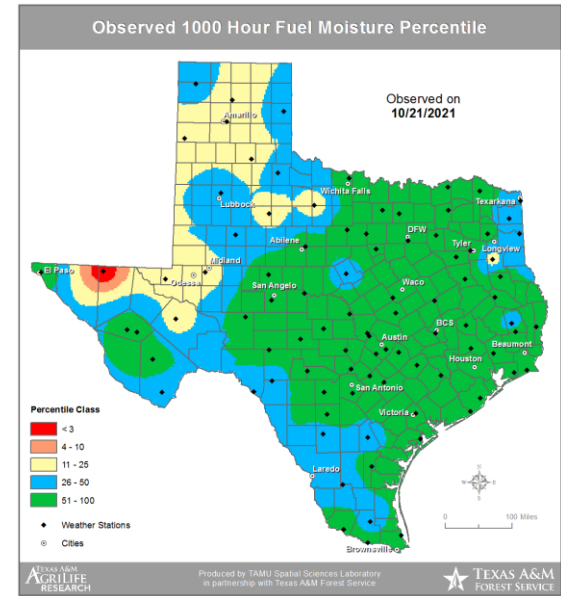
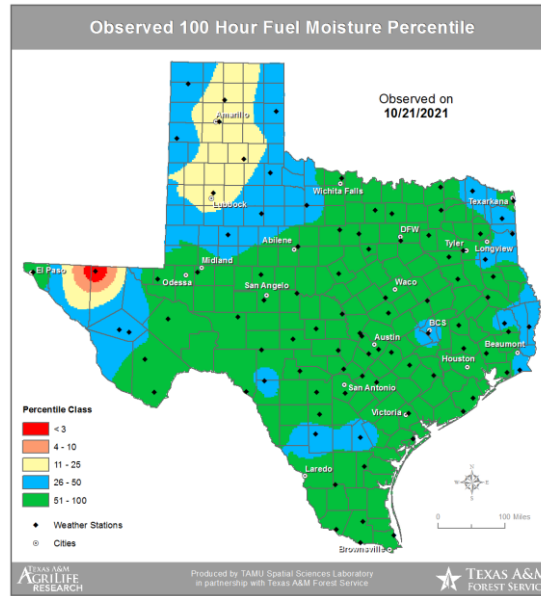
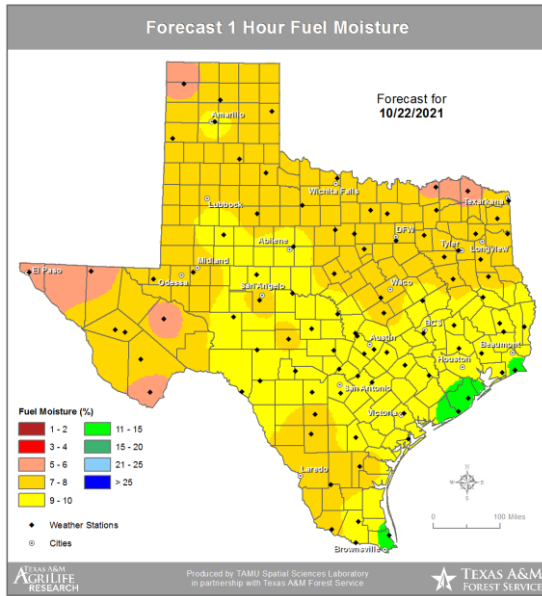
February 2021



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# Wildfire Spread Potential Builds into 2022



- 1-hour fuels (grasses) are trending dry, especially across the Brush Country/upper Valley. Winter grazing can help reduce this fuel load.
- 10-1000 hour fuels (brush and timber) could turn from moist to dry by mid to late winter 2021, and be “tinder” for rapid wildfire spread. Favored areas would be west of IH-69C from western Hidalgo/Brooks to Zapata County



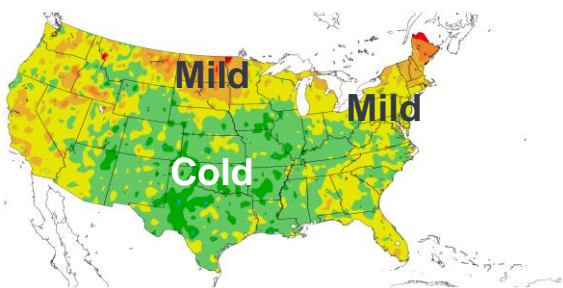
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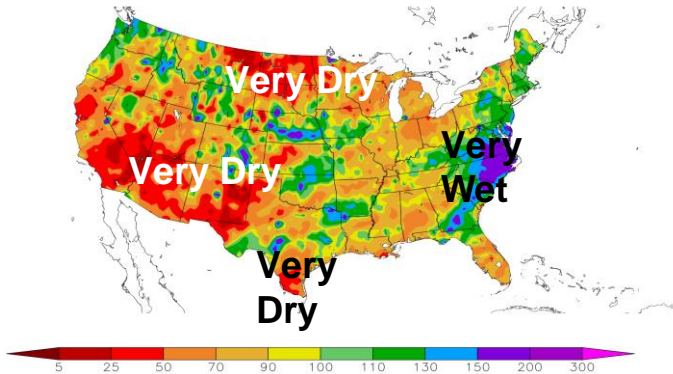
# 2020/2021 vs. 2021/2022

Departure from Normal Temperature (F)  
12/1/2020 – 2/28/2021

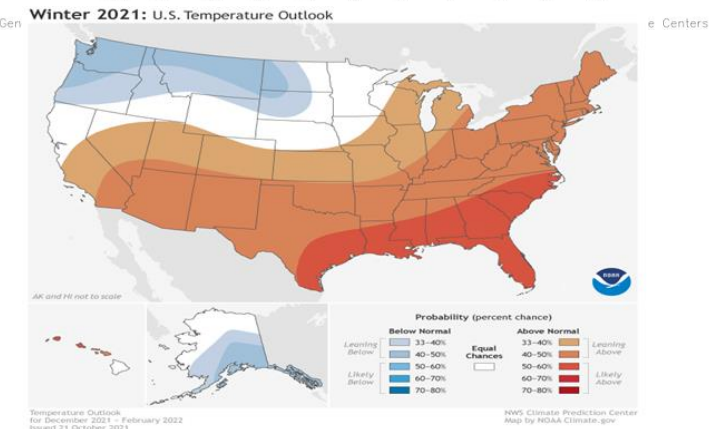


Observed  
Winter  
2020/2021

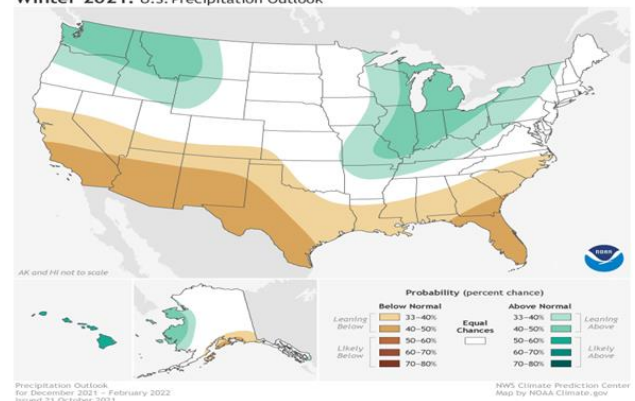
Percent of Normal Precipitation (%)  
12/1/2020 – 2/28/2021



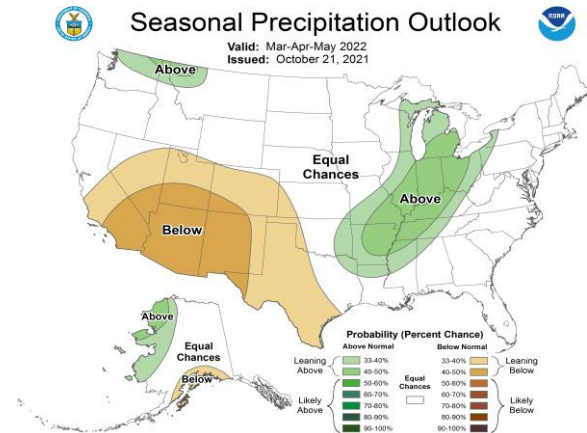
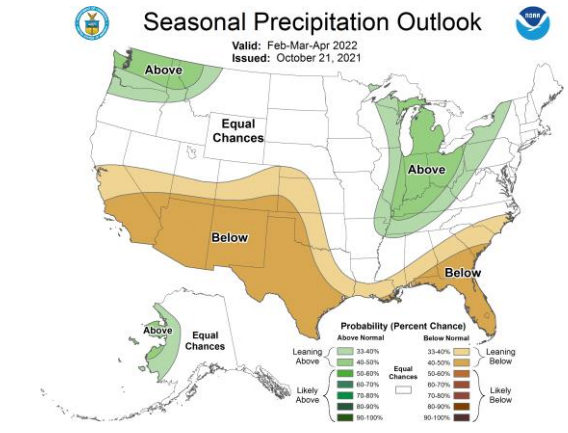
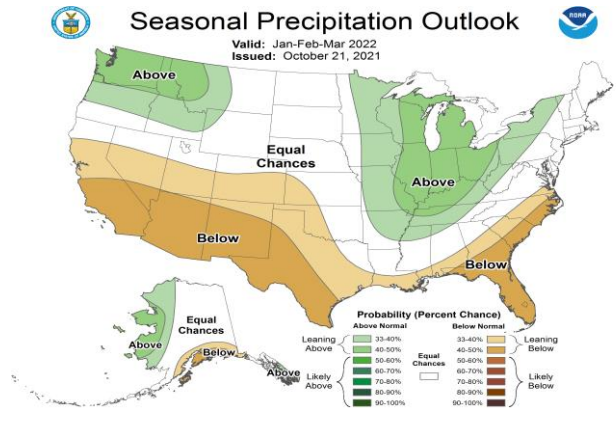
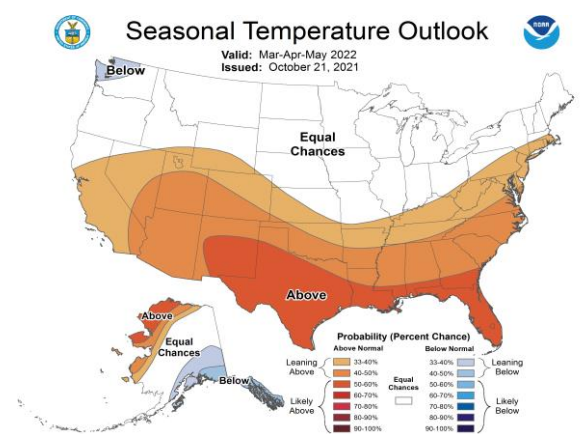
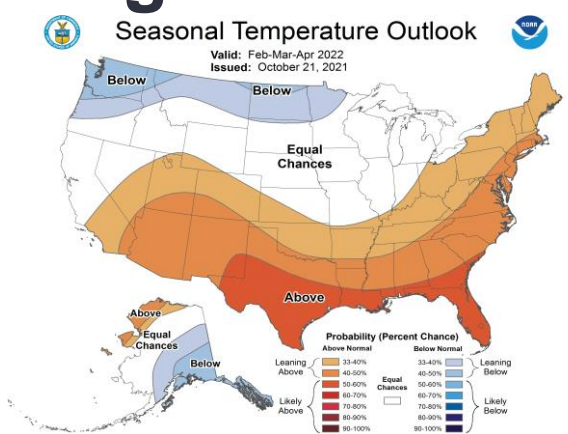
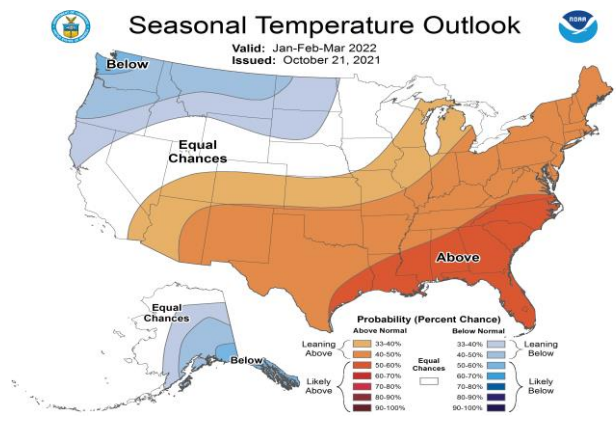
Generated 3/25/2021 at NCEP using observational data  
Winter 2021: U.S. Precipitation Outlook  
MMA Regional Climate Centers



Forecast  
Winter  
2021/2022



# Late Winter and Spring 2022: More of the Same?



# Final Thoughts

- Increasing confidence in **worsening drought by late winter and especially spring 2021** means now is the time to look at agriculture and municipal water plans in case of shortages, **especially from Hidalgo/Brooks County to Zapata County**, along/west of IH-69C.
- The potential for **embedded freezes** requires a review of road treatment plans, as well as potential **agricultural protection and community plans for the power grid and the four P's (people, pets, pipes, plants)**. **We are not explicitly forecasting a repeat of February 2021.** But keep it on the “back burner” of preparedness.
- **Wildfire growth and spread** is a concern based on this forecast, current conditions west of IH-69C, and potential future fuel “loading” in drier/warmer weather east of IH-69C.



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